

Appln. No.: 10/518,194  
Amendment Dated March 18, 2009  
Reply to Office Action of December 19, 2008

TOR-104US

**Amendments to the Drawings:**

The attached drawing sheet includes changes to Figure 17. This sheet replaces the original sheet.

Attachment

**Remarks/Arguments:**

Claims 1-5, 7, and 8 and 11-20 are pending. Claims 11-20 are withdrawn. Claims 6, 9, and 10 have been cancelled without prejudice or disclaimer of the subject matter thereof. Claims 1-3, 5, and 8 are currently amended. The amendments are supported throughout the specification; for example, see Figure 1 and page 3, lines 21-23. No new matter has been added.

**Drawings**

Figure 17 has been objected to for not being designated as prior art. A corrected drawing of Figure 17 is submitted herewith. Accordingly, Applicants respectfully submit that the objection to Figure 17 should be withdrawn.

**Specification**

The disclosure has been objected to for certain informalities. The specification is corrected as follows: (1) page 7, line 21 - "is sopped" has been changed to "is stopped"; (2) page 10, line 22 - "producing patters" has been changed to "producing patterns"; and (3) page 33, line 23 - "In he case" has been changed to "In the case." No new matter has been added. Accordingly, Applicants submit that the objections to the specification should be withdrawn.

**Rejections under 35 U.S.C. §112**

Claims 1-10 stand rejected under 35 U.S.C. §112, first paragraph for not providing enablement for the term "forming." Claim 1 has been amended to recite, "for forming electroplating a plating layer on the conductive surface of the film." Thus, reference to "forming" has been eliminated. No new matter has been added. Accordingly, Applicants submit that the rejections to claims 1-10 for lacking enablement for the term "forming" should be withdrawn.

Claims 1-10 stand rejected under 35 U.S.C. §112, second paragraph for omitting essential steps. Claim 1 has been amended to positive recite method steps. The phrase "characterized in that" has also been replaced with "comprising." The phrase "film carrying means" was also considered by the Examiner to be unclear and has been eliminated by the current amendment. No new matter has been added. Accordingly, Applicants submit that the rejections to claims 1-10 for omitting essential steps should be withdrawn.

**Rejections under 35 U.S.C. §§ 102 and 103**

Claims 1, 3, 9, and 10 stand rejected as anticipated by or in the alternative as unpatentable over JP Patent No. 63-250492 ("JP '492"). Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as anticipated by or in the alternative, as obvious over GB 551,103 ("GB '103"). Claims 2, 7, and 8 are rejected under as unpatentable over GB '103 in view of JP-07-22473 ("JP '473"). Claims 4-6 are rejected as unpatentable over GB '103 in view of Masui et al., and claims 9 and 10 are rejected as unpatentable over GB '103 in view of U.S. Patent No. 3,794,571 (Beyer et al.). Applicants respectfully traverse these rejections and submit that the currently pending claims are patentable over these cited references for at least the reasons set forth below.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. §2131 *citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"To establish a *prima facie* case of obviousness, ... the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. §2143. Additionally, as set forth by the Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 82 U.S.P.Q.2d 1385 (2007), it is necessary to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed.

A method for producing a plated film as defined in claim 1, as currently amended, includes at least the following technical features:

- (a) the film is a resin film;
- (b) the following relation is satisfied  $E_0 > [(I/Cs) \times d]/\sigma$ ;
- (c) the carrying tension T of the resin film is from 10 N/m to 320 N/m; and
- (d) the cathode roll is arranged in the downstream side of the plating bath.

**Rejections of Claims 1, 3, 9, and 10 over JP '492**

Claim 1 is not anticipated or rendered obvious by JP '492, because it fails to disclose or suggest several features recited in claim 1. JP '492 relates to a metallic strip which is

continuously electroplated. JP '492 does not teach or suggest a resin film because the strip used in JP '492 is a metallic strip. JP '492 does not teach or suggest the reduction potential  $E_0$  of a metal constituting the plating layer. Also, JP '492 does not teach or suggest the carrying tension  $T$  of the resin film is from 10 N/m to 320 N/m, e.g., a lower carrying tension  $T$  which is needed for a resin film, as opposed to the tension required for a metallic strip as described in JP '492. Thus, JP '492 does not teach the method recited in claim 1. Accordingly, the invention defined in claim 1 has not been anticipated by JP '492. At least because JP '492 relates to a metallic strip as opposed to the resin film recited in claim 1, there is no reason to modify JP '492 to include either the reduction potential  $E_0$  or the carrying tension  $T$  recited in claim 1, and the Office Action fails to suggest any such reason. Claims 2-5, 7, and 8 depend from claim 1, and therefore should each be allowed for at least the reasons set forth above.

#### **Rejections of Claims 1 and 3 over GB '103**

Claim 1 is not anticipated or rendered obvious by GB '103, because it fails to disclose or suggest several features recited in claim 1. GB '103 relates to electroplating a metallic strip by passing the metallic strip over a non-immersed entry conductor roll positioned substantially at the point of entry of the electrolytic plating solution. Pg. 1, lines 55-61 of GB '103. GB '103 teaches to provide good electrical means of conducting current from a source of current supply to a metallic strip through a conductor roll. See pg. 1, lines 40-44 of GB '103. GB '103, however, fails to teach a resin film or the carrying tension  $T$  of the resin film is from 10 N/m to 320 N/m.

With respect to the cathode roll being arranged in the downstream side of the plating bath, GB '103 neither discloses nor suggests a plating bath being arranged in the upstream side of a cathode roll. In other words, GB '103 does not teach a method for producing a plated film wherein a cathode roll is provided in the downstream side of a plating bath (see page 1, lines 85 to 88 of GB '103). By providing a plating bath in the upstream side of a cathode roll, metallic precipitation occurs on the cathode roll. These precipitations may form depressions in the film or form flaws, which lead to unequal thickness of the plated film. Applicants have discovered that these precipitations do not occur, however, when the following relation is satisfied  $E_0 > [(I/Cs) \times d]/\sigma$  (see page 23, lines 8 to 12 and line 22 to page 24, line 10 of the present application). Because GB '103 does not suggest a plating bath being arranged in the upstream side of the cathode roll, GB '103 does not face the problem that can be solved by exemplary embodiments of the present invention, i.e., to provide a more evenly plated film

while reducing or eliminating metallic precipitations on the cathode roll. Thus, the subject matter of claim 1 is not anticipated by GB '103. At least because GB '103 relates to a metallic strip as opposed to the resin film recited in claim 1, there is no reason to modify GB '103 to include either the reduction potential  $E_0$  or the carrying tension  $T$  recited in claim 1, and the Office Action fails to suggest any such reason. Claims 2-5, 7, and 8 depend from claim 1, and therefore should each be allowed for at least the reasons set forth above.

**Rejections of Claims 2, 7, and 8 over GB '103 in view of JP '473**

Claims 2, 7, and 8 depend on claim 1, and should be allowable for at least the reasons stated above. In particular, GB '103 does not teach or suggest features (a), (b), (c) or (d) as listed above. JP '473 relates to forming a plating layer by using a plurality of plating baths. The energizing amount in each bath is increased to reportedly produce a uniform plating layer. JP '473, however, does not teach or suggest the following relation is satisfied  $E_0 > [(I/Cs) \times d]/\sigma$  or the carrying tension  $T$  of the resin film is from 10 N/m to 320 N/m. Thus, even in combining GB '103 and JP '473 as proposed in the Office Action, that hypothetical combination would not teach each and every element of the claimed invention. As none of the references, alone or in any reasonable combination, teaches each of the claimed limitations, Applicants respectfully submit a *prima facie* case of obviousness has not been established, and claims 2, 7, and 8 should be in condition for allowance.

**Rejections Claims 4-6 a over GB '103 in view of Masui et al.**

The subject-matter of original claim 6 has been introduced into currently amended claim 1. Claims 4 and 5 depend on claim 1, and should be allowable for at least the reasons stated above. In particular, GB '103 does not teach or suggest features (a), (b), (c) or (d) as listed above. Masui et al. discloses a metallic strip in a hot dip galvanizing line, but does not teach or suggest a resin film as recited in claim 1. Furthermore, one having ordinary skill in the art would recognize a big difference between the lower tension which is needed in a process for a resin film and a higher tension which is needed in a process for a metallic strip. Thus, even in combining GB '103 and Masui et al. as proposed in the Office Action, that hypothetical combination would not teach each and every element of the claimed invention. As none of the references, alone or in any reasonable combination, teaches each of the claimed limitations, Applicants respectfully submit a *prima facie* case of obviousness has not been established, and claims 4 and 5 should be in condition for allowance.

**Rejections of Claims 9 and 10 over GB '103 in view of Beyer et al.**

Claims 9 and 10 have been cancelled without prejudice or disclaimer of the subject matter thereof. Applicants respectfully submit that the rejection is therefore now moot.

**Conclusion**

For all of the foregoing reasons, Applicants respectfully request reconsideration and allowance of the claims. Applicants invite the examiner to contact their undersigned representative if it appears that this may expedite examination.

Respectfully submitted,

  
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Attachments: Figure 17 (1 sheet)

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